REMARKS

In the Office Action the Examiner noted that claims 1-32 were pending in the application and the Examiner rejected all claims. By this amendment various claims have been amended and claims 9, 11, 13, 15, 17, 19 and 32 have been cancelled. Thus, claims 1-8, 10, 12, 14, 16, 18 and 20-31 are pending in the application. The Examiner's rejections are traversed below.

Rejection of Claims 10, 11, 16, 17, 20, 24, 28 and 32 Under 35 USC § 103

In items 6-15 on pages 3-16 of the Office Action the Examiner rejected claims 10-11, 16, 17, 20, 24, 28 and 32 under 35 U.S.C. 103 as anticipated by U.S. Patent Publication 2003/0204618 to Foster et al. and International Publication WO99/14931 to Dalton et al.

Claim 10 as Amended

Claim 10 as amended is directed to a method of maintaining a routing table in a system that includes a packet forwarder and a packet control device. Claim 10 as amended recites the feature of maintaining a second routing table of each packet forwarder using the routing information on the first routing table associated with each of the virtual interface groups. This feature is not taught or suggested by the relied upon art.

The Prior Art

The Foster et al. reference describes, a method, a system and a computer-readable medium for processing received data communications that are routed through a network by using virtual identifiers which can each be assigned to one or more paths through a network to a destination, such as by a network manager for the network (see abstract).

The Dalton reference is directed to a centralized routing engine that is able to assist gateways in making routing decisions for calls being placed in an IP network environment (see abstract).

Claim 10 Patentably Distinguishes Over the Relied Upon Art

As discussed above, claim 10 as amended specifies a feature of maintaining a second routing table of each packet forwarder using the routing information on the first routing table associated with each of the virtual interface groups. In item 9 on page 5 of the Office Action the Examiner takes the position that Foster teaches that "virtual interfaces are grouped for each packet forwarder, further comprising maintaining a routing table of each packet forwarder using a routing process associated with each of the virtual interfaces grouped." In particular, the Examiner refers to paragraph [0029] of Foster which states that"[e]ach IFM may maintain a

virtual identifier table for each of its ports that maps virtual identifiers to destination ports". However, this does not correspond to maintaining a second routing table of each packet forwarder using the routing information on the first routing table associated with each of the virtual interface groups as set forth in claim 10. Foster merely discloses a pair of routing tables and a port in the same device. Thus, Foster fails to disclose or suggest a first routing table included in a control device and a second routing table included in a forwarder, wherein the second routing table is updated by the first routing table in the manner set forth in claim 10. Therefore, it is submitted that none of the relied upon art teaches or suggests the method of claim 10 which includes:

> registering the path by the deciding to a first routing table; and
>
> transmitting the packet to the packet forwarder including the network interface that is associated with an address of the virtual interface grouped for each packet forwarder; and
>
> maintaining a second routing table of each packet forwarder using the routing information on the first routing table associated with each of the virtual interfaces groups, wherein
>
> the packet control device connects to the packet forwarder through the network.

Therefore, it is submitted that claim 10 patentably distinguishes over the relied upon art.

Claim 16

Claim 16 is directed to a computer-readable storage which causes a computer to perform:

> registering the path by the deciding to a first routing table; and
>
> transmitting the packet to the packet forwarder including the network interface that is associated with an address of the virtual interface grouped for each packet forwarder; and
>
> maintaining a second routing table of each packet forwarder using the routing information on the first routing table associated with each of the cirtual interfaces grouped, wherein
>
> the packet control device connects to the packet forwarder through the network.

Therefore, it is submitted that claim 16 patentably distinguishes over the relied upon art.

Claim 20

Claim 20 is directed to a router control device in which a registering unit registers the path decided by the deciding unit to be a first routing table and a routing unit that generates a second routing table in the forwarder based on routing information in routing information packets received at the network interface of the forwarder. A routing information storage unit stores the

first routing table created and managed by the routing unit. The routing unit generates the second routing table in the forwarder based on the routing information on the first routing table stored in routing information storage unit.

The relied upon prior art does not teach or suggest features of a registering unit that registers the path decided by the deciding unit to be a first routing table to be in combination with a routing unit that generates a second routing table in the forwarder, wherein the routing unit generates the second routing table in the forwarder based on the routing information on the first routing table stored in the routing information storage unit. Thus, it is submitted that the relied upon art does not teach or suggest the router control device of claim 20 which includes:

> a routing unit that generates a second routing table in the forwarder based on routing information in routing information packets received at the network interface of the forwarder and transferred by the forwarder including the network interface that is associated with an address of the virtual interface to the router control device; and
>
> a routing information storage unit that stores the first routing table created and managed by the routing unit for packet forwarding between the virtual interfaces, wherein
>
> the router control device connects to the forwarder through a network, and
>
> the routing unit generates the second routing table in the forwarder based on the routing information on the first routing table stored in the routing information storage unit.

Therefore, it is submitted that claim 20 patentably distinguishes over the relied upon art.

Claim 24

Claim 24 is directed to a method of maintaining a routing table in which a first routing table is generated in the forwarder based on routing information in routing information packets, a path decided by deciding is registered in a second routing table. Claim 24 also specifies storing the second routing table created and managed by the routing unit for packet forwarding between the virtual interfaces. The generating includes generating the first routing table in the forwarder based on the routing information on the second routing table. These features are not taught or suggested by the relied upon art. Therefore, it is submitted that the relied upon art does not teach or suggest the claimed method of claim 24 which includes:

> generating a first routing table in the forwarder based on routing information in routing information packets received at the network interface of the forwarder and transferred by the forwarder to the router control device; and

registering the path decided by the deciding to a second routing table;

storing the second routing table created and managed by the routing unit for packet forwarding between the virtual interfaces, wherein

the router control device connects to the forwarder including the network interface that is associated with an address of the virtual interface through the network, and

the generating includes generating the first routing table in the forwarder based on the routing information on the second routing table.

Therefore, it is submitted that claim 24 patentably distinguishes over the relied upon art.

Claim 28

Claim 28 is directed to a computer readable storage which causes a computer to perform:

generating a first routing table in the forwarder based on routing information in routing information packets received at the network interface of the forwarder and transferred by the forwarder to the router control device; and

registering the path decided by a second deciding to the routing table;

storing a second routing table created and managed by the routing unit for packet forwarding between the virtual interfaces, wherein

the router control device connects to the forwarder including the network interface that is associated with an address of the virtual interface through the network, and

the generating includes generating the first routing table for the forwarder based on the routing information stored.

Therefore, it is submitted that claim 28 patentably distinguishes over the relied upon art.

Claims 11, 17 and 32

Claims 11, 17 and 32 have been cancelled.

Rejection of Claims 1-9, 12-15, 18 and 19 Under 35 USC § 103

In items 16-31 on pages 16-42 of the Office Action the Examiner rejected claims 1-9, 12-15, 18 and 19 under 35 U.S.C. 103 as unpatentable over Foster, U.S. Patent 6,496,935 to Fink et al. and the Dalton et al. reference.

Claim 1 as Amended

Claim 1 as amended is directed to a packet control system in which a packet forwarder includes a first routing table and a packet control device includes a second routing table. A registering unit registers the path decided by the deciding unit to the second routing table and the first routing table is updated based on a routing information on the second routing table. These features are not taught or suggested by the relied upon art.

The Prior Art

The Dalton and Foster references have been discussed above.

The Fink et al. reference is directed to a system, a device and a method for accelerating packet filtration by supplementing a fire wall with a pre-filtering module (see abstract). As acknowledged by the Examiner on page 17 of the Office Action "Fink does not teach a specific rule or routing scheme to use with the fire wall."

Claim 1 Patentably Distinguishes Over the Relied Upon Art

It is submitted that none of the references teach or suggest the packet control system of claim 1 in which the packet forwarder includes a first routing table, the packet control device includes a second routing table and:

> a registering unit that registers the path decided by the deciding unit to the second routing table,...
>
> the packet control device connects to the packet forwarder through the network, and
>
> the first routing table is updated based on a routing information on the second routing table.

Therefore, it is submitted that claim 1 patentably distinguishes over the relied upon art.

Claim 2

Claim 2 is directed to a packet control device which includes a first routing table and is connected to a packet forwarder for a network. Claim 2 further recites:

> a second routing table included in the packet forwarder is updated based on routing information on the first routing table.

Therefore, it is submitted that claim 2 patentably distinguishes over the relied upon art.

Claim 4

Claim 4 is directed to a packet control device including a first routing table and further recites:

> the packet control device routes the packet using a routing

process associated with each of the groups considering interfaces belongs to the groups to create a second routing table for each, the each of the groups corresponds to a separate device, and wherein

the packet control device connects to the packet forwarder through a network, and

each of the second routing table is updated based on a routing information that corresponds to the separate device on the first routing table.

Therefore, it is submitted that claim 4 patentably distinguishes over the relied upon art.

Claim 6

Claim 6 is directed to a packet forwarder which forwards a packet from its network interface to its other network interface which comprises:

a first routing table that makes a destination address of a packet associate with a next transfer destination...

the first routing table is updated based on a routing information on the second routing table included in the packet control device.

Therefore, it is submitted that claim 6 patentably distinguishes over the relied upon art.

Claim 8

Claim 8 is directed to a method of maintaining a routing table using a routing process which includes:

acquiring the first routing table updated by the routing process; and

transmitting the routing information on the first routing table to the packet forwarder for updating the second routing table, wherein

the packet control device connects to the packet forwarder through a network.

Therefore, it is submitted that claim 8 patentably distinguishes over the relied upon art.

Claim 12

Claim 12 is directed to a method of maintaining a routing table of a packet forwarder comprising:

receiving the routing information of the first routing table from a packet control device; and

setting the routing information to the second routing table in the packet forwarder, wherein

the second routing table makes a destination address of a packet associate with a next transfer destination.

Therefore, it is submitted that claim 12 patentably distinguishes over the relied upon art.

Claim 14

Claim 14 is directed to a computer readable storage which causes to perform:

acquiring the first routing table updated by the routing process; and

transmitting the routing information on the first routing table to the packet forwarder for updating the second routing table, wherein

the packet control device connects to the packet forwarder through a network.

Therefore, it is submitted that claim 14 patentably distinguishes over the relied upon art.

Claim 18

Claim 18 is directed to computer readable storage which causes a computer to perform:

receiving the routing information of the first routing table from a packet control device; and

setting the routing information on the first routing table to the second routing table in the packet forwarder, wherein

the second routing table makes a destination address of a packet associate with a next transfer destination.

Therefore, it is submitted that claim 18 patentably distinguishes over the relied upon art.

Claim 3, 5 and 7

Claims 3, 5 and 7 depend from claims 2, 4, and 6 respectively and include all the features from the claim which they depend plus additional features which are not taught or suggested by the relied upon art. Therefore, it is submitted that these claims also patentably distinguish over the relied upon art.

Claims 9, 13, 15 and 19

Claims 9, 13, 15 and 19 have been cancelled.

Rejection of Claims 21-23, 25-37 and 29-31 Under 35 USC § 103

In items 32-41 on pages 42-58 of the Office Action the Examiner rejected claims 21-23, 25-27 and 29-31 under 35 U.S.C. 103 as unpatentable over Foster and Dalton and further in view of U.S. Patent 6,272,522 to Lin et al.

The Prior Art

The Foster and Dalton references have been discussed above.

The Lin reference discusses a data packet switching and server load balancing device which is provided by a general purpose multiprocessor computer system (see abstract).

The Lin reference does not cure the deficiencies of Dalton and Foster described above.

Claims 21, 22, 25, 26, 29 and 30

Claims 21 and 22 depend from claim 20, claims 25 and 26 depend from claim 24, and claims 29 and 30 depend from claim 28. Thus, these claims include all the features of the claim from which they depend plus additional features which are not taught or suggested by the relied upon art. Therefore, it is submitted that claims 21, 22, 25, 26, 29 and 30 patentably distinguish over the relied upon art.

Claim 23

Claim 23 is directed to a router control system which includes a forwarder and a router control device including:

> a routing unit that generates a first routing table in the forwarder based on the routing information stored in the routing information storage unit;
>
> a registering unit that registers the path decided by the deciding unit to a second routing table; and
>
> the routing table transmission unit that acquires the second routing table, and transmits the routing information on the second routing table to the first routing table in the forwarder, and
>
> the forwarder forwards a packet from its network interface, being associated with an address of the virtual interface, to its other network interface according to the first routing table, and includes a received packet transfer unit that transmits a routing information packet received at the network interface to the router control device that maintains the first routing table using a routing process, wherein
>
> the router control device connects to the forwarder through a network.

Therefore, it is submitted that claim 23 patentably distinguishes over the relied upon art.

Claim 27

Claim 27 is directed to a method of maintaining a routing table which includes:

> generating a first routing table in the forwarder based on the

routing information stored;

acquiring a second routing table;

registering the path decided by the deciding unit to the second routing table;

transmitting the routing information on the second routing table to the forwarder;

forwarding a packet from a network interface of the forwarder to other network interface of the forwarder according to the first routing table; and

transmitting a routing information packet received at the network interface of the forwarder, being associated with an address of the virtual interface, to the router control device that maintains the first routing table of the forwarder using a routing process, wherein

the router control device connects to the forwarder through a network.

Therefore, it is submitted that claim 27 patentably distinguishes over the relied upon art.

Claim 31

Claim 31 is directed to a computer readable storage which causes a computer to perform:

generating a first routing table in the forwarder based on the routing information on a second routing table;

acquiring the second routing table;

registering the path decided by the deciding unit to the first routing table;

transmitting the routing information on the second routing table to the forwarder;

forwarding a packet from a network interface of the forwarder to another network interface of the forwarder according to the first routing table; and

transmitting a routing information packet received at the network interface of the forwarder, being associated with an address of the virtual interface, to the router control device that maintains the first routing table of the forwarder using a routing process, wherein

the router control device connects to the forwarder through a network.

Therefore, it is submitted that claim 31 patentably distinguishes over the relied upon art.

SUMMARY

It is submitted that none of the references, either taken alone or in combination, teach the present claimed invention. Thus, claims 1-8, 10, 12, 14, 16, 18 and 20-31 are deemed to be

in a condition suitable for allowance. Reconsideration of the claims and an early of Notice of Allowance are earnestly solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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Date: 12-16-10

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